REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed on April 3, 2009 (Paper No. 20090329). Upon entry of this response, claims 1-22 are pending in the application. Applicant respectfully requests reconsideration and allowance of all pending claims.

I. Claim Rejections under 35 U.S.C. §103(a)

Claims 1-3 and 5-22 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Joseph et al.* (U.S. Patent No. 6,628,615, hereafter "*Joseph*") in view of *Afek et al.* (U.S. Patent No. 5,748,901, hereafter "*Afek*"). Claim 4 has been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Joseph* in view of *Afek* in further view of *Katsube et al.* (U.S. Patent No. 6,501,756, hereafter "*Katsube*"). Applicant respectfully traverses the rejections as applied to pending claims 1-22.

It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest (either implicitly or explicitly) all elements/features/steps of the claim at issue. *See, e.g., In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981). Applicant respectfully submits that a *prima facie* case of obviousness is not established using the art of record.

A. Independent Claim 1

Applicant's claim 1 provides as follows (emphasis added):

> In a multi-node network comprising a plurality of distributed switching nodes, a method implemented in at least one of the plurality of distributed switching nodes for routing information entering the at least one of the plurality of distributed switching nodes over a first channel to one of a plurality of other channels, the method comprising:
> obtaining priority information for the information;
> ***ascertaining a remaining communication length for the information for each of the plurality of other channels***;

> ***determining a current demand for each of the plurality of other channels***; and
> ***routing the information entering at the first channel to one of the plurality of other channels based upon an evaluation that considers a combination of the obtained priority information, the ascertained communication length for each of the plurality of other channels, and the current demand for each of the plurality of other channels.***

Applicant respectfully submits that independent claim 1 is allowable for at least the reason that *Joseph* in view of *Afek* does not disclose, teach, or suggest at least the features recited and emphasized above in claim 1.

The Office Action recites claim 1 and then states on pages 3-4 that:

> Joseph is a system for communicating messages between nodes of a packet switched communication network. Joseph, Abstract. Joseph looks at the priority of the message. Joseph, column 4, line 51. Joseph looks at the length of the packet being transmitted. Joseph, column 4, lines 54-67 – software configurable length "M". The length "M" is used to determine the message class. Joseph, column 5, lines 1-8. The routing and forwarding of packets to a specific channel in Joseph is performed based upon the priority of a message, and the class of the message. Joseph, column 5, lines 8-15... Joseph failed to disclose routing packets to various channels based upon a current demand for channels.

As such, the Office Action appears to allege that using the length of the packet to determine a message class corresponds to "ascertaining a remaining communication length for the information for each of the plurality of other channels" as recited in claim 1. Applicant respectfully disagrees. Applicant submits that "ascertaining a remaining communication length ... for each of the plurality of other channels" is not the same as determining a message class.

Specifically, *Joseph* teaches:

> There are three message classes: latency sensitive, bandwidth sensitive and bi-modal. Latency sensitive messages are messages that must be smaller than a software configurable length "M," that is specified by a trusted software agent in a small message threshold register (not shown). Bi-modal class messages are messages that comprise two parts: a first user-specified part which includes the first "N" bytes of the message that are latency sensitive; and, a second remainder part of the message which is bandwidth sensitive. The transport agent 200 requires that N<=M. If a user specifies a latency sensitive message larger than M or a bi-modal message with a latency sensitive component >M, the transport agent 200 reclassifies the message as bandwidth sensitive. Additionally, the

> network interface prevents an M setting larger than the flit size L of the network.
>
> It should be understood that the message class and priority specifications are optional and if no message class or priority is specified with a message, the transport agent assigns one. If the message size is <=M, it defaults to the latency sensitive message class. Otherwise, it is assigned to the bandwidth sensitive message class. In either case, the message is assigned the lowest priority in the respective message class.
>
> After determining the class and priority of a message, the transport agent 200 parses it and forwards information about the message to the specified second level channel (SLC) indicated as SLCs 201a, . . . ,201j. If a bandwidth sensitive message is longer than the packet size of the network, the transport agent divides it into packets and passes information about each packet separately to the channel.

(col. 4, line 52 – col. 5, line 15). While *Jospeh* appears to disclose that message classification is dependent upon a specified length "M", *Joseph* does not teach or suggest that either the message size or the message class is "a remaining communication length" for a channel. Nor does *Joseph* disclose or suggest "ascertaining a remaining communication length" for a channel, much less "ascertaining a remaining communication length ... for each of the plurality of other channels". The addition of *Afek* does not cure the deficiencies of *Joseph*. Thus, *Joseph* in view of *Afek* does not teach or suggest "ascertaining a remaining communication length for the information for each of the plurality of other channels" as recited in claim 1. Nor does *Joseph* in view of *Afek* disclose or suggest "routing the information entering at the first channel to one of the plurality of other channels based upon an evaluation that considers ... the ascertained communication length for each of the plurality of other channels".

Additionally, while the Office Action concedes on page 4 that "Joseph failed to disclose routing packets to various channels based upon a current demand for channels", the Office Action further alleges on page 4 that:

> Afek is a routing algorithm for flow control. Afek, column 5, line 65. Afek's algorithm measures the amount of unused link capacity to limit session rates. Afek, column 6, lines 25-32. Afek counts the number of cells arriving over a period of time. Afek, column 6, lines 35-40. Afek adjusts session rates based upon available capacity. Afek, column 7, lines 20-26. Afek is designed for both ATM and TCP networks. Afek, column 7, line 55.

As such, the Office Action appears to allege that measuring unused link capacity corresponds to "determining a current demand for each of the plurality of other channels" as recited in claim 1. Applicant respectfully disagrees. Specifically, *Afek* teaches:

> The basic idea of the algorithm is to keep a certain portion of the link capacity unused and to limit the rates of sessions sharing the link by the amount of the unused bandwidth on that link. Δ is defined to be the unused link capacity, i.e., the link capacity minus the sum of the rates of sessions that use the link. The rates of sessions that are above Δ are reduced towards Δ, and the rates of sessions that are below may be increased. This mechanism reaches a steady state only when the unused capacity Δ is equal to the maximum rate of any session that crosses the link and all the sessions that are constrained by this link are at this rate. The value of Δ is easily computed in the output port of each link by counting the number of cells arriving at the queue of that port over an interval of time, subtracting this amount from the number of cells that could be transmitted in that interval, dividing by the length of the time interval, and converting to appropriate units of measurement. An alternative approach, which is somewhat inferior, is to compute the value of Δ by counting the number of cells transmitted via the link over an interval of time, subtracting this amount from the number of cells that could be transmitted in that interval, and, as before, dividing by the length of the time interval and converting to appropriate units of measurement.

(Col. 6, lines 24-46). While *Afek* discloses determining the unused capacity of a link (Δ) by counting the number of cells arriving on the link, *Afek* does not teach or suggest "determining a current demand for each of the plurality of other channels". The addition of *Joseph* does not cure this deficiency of *Afek*.

Even assuming, for the sake of argument, that the unused link capacity (Δ) is determined for other channels, *Afek* does not teach or suggest "routing the information entering at the first channel to one of the plurality of other channels based upon an evaluation that considers ... the current demand for each of the plurality of other channels". Rather, *Afek* discloses "limit[ing] the rates of sessions sharing the link by the amount of the unused bandwidth on that link" by adjusting the rates of the sessions that use the link (col. 6, lines 25-34; emphasis added). While *Afek* appears to disclose adjusting rates of sessions sharing the same link based on the link's unused capacity, *Afek* does not teach or suggest "routing the information ... to one of the plurality of other channels" based on the unused link capacity.

Thus, *Joseph* in view of *Afek* does not teach or suggest "routing the information entering at the first channel to one of the plurality of other channels based upon an evaluation that considers ... the current demand for each of the plurality of other channels" as recited in claim 1. Accordingly, *Joseph* in view of *Afek* does not disclose or suggest "routing the information entering at the first channel to one of the plurality of other channels based upon an evaluation that considers a combination of the obtained priority information, the ascertained communication length for each of the plurality of other channels, and the current demand for each of the plurality of other channels."

For at least the reasons described above, *Joseph* in view of *Afek* fails to disclose, teach or suggest all of the features recited in claim 1. Therefore, Applicant respectfully requests that the rejection of claim 1 be withdrawn.

B. Dependent Claims 2-3 and 5-16

Since independent claim 1 is allowable, Applicant respectfully submits that claims 2-3 and 5-16 are allowable for at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir.1988). Therefore, Applicant respectfully requests that the rejection of claims 2-3 and 5-16 be withdrawn.

C. Dependent Claim 2

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully requests that the rejection of claim 2 be withdrawn for at least the reason that *Joseph* in view of *Afek* fails to disclose, teach, or suggest at least the features recited and emphasized below. Applicant's claim 2 provides as follows (emphasis added):

> The method of claim 1 further comprising ***determining a demand for channels coupled to remote nodes between a current node and a destination node and utilizing this priority information in determining a channel over which to route the information entering the at least one of the plurality of distributed switching nodes***.

The Office Action alleges on page 4 that:

> Afek measures amount of unused link capacity. Afek, column 6, lines 25-32. The implementation of Afek over a network involves back pressure on the previous routers, and any demand on remote nodes would be propogated backward using Afek to all prior nodes.

Applicant respectfully disagrees. While *Afek* discloses determining the unused capacity of a link (Δ) by counting the number of cells arriving on the link, *Afek* does not teach or suggest "determining a demand for channels coupled to remote nodes between a current node and a destination node". Even assuming, *arguendo*, that limiting the rates of sessions sharing a link to keep a certain portion of the link capacity unused produces "back pressure" on previous routers, Applicant submits that propogating "back pressure" to previous nodes is not the same as "determining a demand for channels coupled to remote nodes between a current node and a destination node". The addition of *Joseph* does not cure the deficiencies of *Afek*. Thus, *Joseph* in view of *Afek* does not disclose or suggest "determining a demand for channels coupled to remote nodes between a current node and a destination node". Nor does *Joseph* in view of *Afek* teach or suggest "utilizing this priority information in determining a channel over which to route the information entering the at least one of the plurality of distributed switching nodes" as recited in claim 2.

For at least the reasons described above, *Joseph* in view of *Afek* fails to disclose, teach or suggest all of the features recited in claim 2. Therefore, Applicant respectfully requests that the rejection of claim 2 be withdrawn.

D. Dependent Claim 3

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully requests that the rejection of claim 3 be withdrawn for at least the reason that *Joseph* in view of *Afek* fails to disclose, teach, or suggest at least the features recited and emphasized below. Applicant's claim 3 provides as follows (emphasis added):

> The method of claim 1 further comprising ***obtaining a destination node from a header portion of the information***.

The Office Action alleges on page 5 that:

> Joseph disclosed transmitting packets over a channel. Joseph, column 4, lines 39-42. It is inherent to Joseph that in order to transmit a packet to its destination, that Joseph would look to the header of the packet since the packet would state the origin and destination addresses of the packet for routing.

Applicant respectfully disagrees. While *Joseph* teaches "the highest level agent in the interface is the transport agent 200 which functions to accept requests to transfer messages, i.e., send and receive packets, between all users of the network interface" (col. 4, lines 39-42), *Joseph* does not disclose or suggest "obtaining a destination node from a header portion of the information". "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted). The addition of *Afek* does not overcome this deficiency. Accordingly, because no extrinsic evidence has been provided, the statements in the Office Action are not adequately supported, and the rejection of claim 3 is improper.

For at least the reasons described above, *Joseph* in view of *Afek* fails to disclose, teach or suggest all of the features recited in claim 3. Therefore, Applicant respectfully requests that the rejection of claim 3 be withdrawn.

E. Dependent Claim 7

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully requests that the rejection of claim 7 be withdrawn for at least the reason that *Joseph* in view of *Afek* fails to disclose, teach, or suggest at least the features recited and emphasized below. Applicant's claim 7 provides as follows (emphasis added):

> The method of claim 1, wherein the ***ascertaining the remaining communication length comprises receiving and evaluating network information communicated from other nodes in the network***.

The Office Action alleges on page 5 that:

> Afek, column 6, lines 25-32 disclosed the back pressure exertion of current bandwidth capacity on previous nodes. As the bandwidth is changed in Afek, prior routers are notified of the changes in bandwidth capacity for each node – receiving and evaluating information communicated from other nodes in the network.

Applicant respectfully disagrees. While the cited section of *Afek* teaches:

> The basic idea of the algorithm is to keep a certain portion of the link capacity unused and to limit the rates of sessions sharing the link by the amount of the unused bandwidth on that link. Δ is defined to be the unused link capacity, i.e., the link capacity minus the sum of the rates of sessions that use the link. The rates of sessions that are above Δ are reduced towards Δ, and the rates of sessions that are below may be increased.

Afek does not disclose or suggest "receiving and evaluating network information communicated from other nodes in the network". Even assuming, *arguendo*, that limiting the rates of sessions sharing a link to keep a certain portion of the link capacity unused produces "back pressure" on previous routers, Applicant submits that propogating "back pressure" backwards to previous nodes is not the same as "receiving ... network information communicated from other nodes in the network", much less evaluating the received information to ascertain the remaining communication length. The addition of *Joseph* does not cure the deficiencies of *Afek*. Thus, *Joseph* in view of *Afek* does not disclose or suggest "ascertaining the remaining communication length comprises receiving and evaluating network information communicated from other nodes in the network" as recited in claim 7.

For at least the reasons described above, *Joseph* in view of *Afek* fails to disclose, teach or suggest all of the features recited in claim 7. Therefore, Applicant respectfully requests that the rejection of claim 7 be withdrawn.

F. Dependent Claim 10

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully requests that the rejection of claim 10 be withdrawn for at least the reason that a *prima facie* case of obviousness has not been established using the art of record. The Office Action alleges on page 6 that "It would have been obvious to one of ordinary skill in the art at the time of the invention to substantially balance all three of these factors when routing information to treat each factor with equal importance as best needed for system requirements." Applicant respectfully disagrees. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). "'[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR*, 550 U.S. at 418, 82 USPQ2d at 1396 quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). Applicant submits that, other than the bald assertion that "[i]t would have been obvious", the Office Action provides no articulated reasoning, in light of the cited references, to support the legal conclusion. Thus, Applicant respectfully submits a *prima facie* case of obviousness has not been established using the art of record and requests that the rejection of claim 10 be withdrawn.

G. Dependent Claim 11

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully requests that the rejection of claim 11 be withdrawn for at least the reason that a *prima facie* case of obviousness has not been established using the art of record. The Office Action alleges on page 6 that "It would have been obvious to one of ordinary skill in the art at the time of the

invention to make one of these factors weighted more than the others when routing information based on system requirements." Applicant respectfully disagrees. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). "'[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR*, 550 U.S. at 418, 82 USPQ2d at 1396 quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). Applicant submits that, other than the bald assertion that "[i]t would have been obvious", the Office Action provides no articulated reasoning, in light of the cited references, to support the legal conclusion. Thus, Applicant respectfully submits a *prima facie* case of obviousness has not been established using the art of record and requests that the rejection of claim 11 be withdrawn.

H. Independent Claim 17

Applicant's claim 17 provides as follows (emphasis added):

> In a multi-node network comprising a plurality of distributed switching nodes, a method implemented in at least one of the plurality of distributed switching nodes for routing information out of the at least one of the plurality of distributed switching nodes over a first channel from one of a plurality of other channels, the method comprising:
> obtaining priority information for the information entering the node for each of the plurality of other channels;
> ***ascertaining a remaining communication length for the information entering the node for each of the plurality of other channels***;
> determining a current demand of the first channel; and
> ***routing the information entering at one of the other channels to the first channel based upon an evaluation that considers a combination of the obtained priority information for each of the plurality of other channels, the ascertained communication length***

for each of the plurality of other channels, and the current demand for the first channel.

Applicant respectfully submits that independent claim 17 is allowable for at least the reason that *Joseph* in view of *Afek* does not disclose, teach, or suggest at least the features recited and emphasized above in claim 17.

The Office Action alleges on page 7 that "Claim 17 is the egress equivalent of the ingress method of claim 1, and the rejection of claim 1 is applicable to claim 17." With respect to claim 1, the Office Action states on pages 3-4 that:

> Joseph is a system for communicating messages between nodes of a packet switched communication network. Joseph, Abstract. Joseph looks at the priority of the message. Joseph, column 4, line 51. Joseph looks at the length of the packet being transmitted. Joseph, column 4, lines 54-67 – software configurable length "M". The length "M" is used to determine the message class. Joseph, column 5, lines 1-8. The routing and forwarding of packets to a specific channel in Joseph is performed based upon the priority of a message, and the class of the message. Joseph, column 5, lines 8-15... Joseph failed to disclose routing packets to various channels based upon a current demand for channels.

As such, the Office Action appears to allege that using the length of the packet to determine a message class corresponds to "ascertaining a remaining communication length for the information entering the node for each of the plurality of other channels" as recited in claim 17. Applicant respectfully disagrees. Applicant submits that "ascertaining a remaining communication length ... for each of the plurality of other channels" is not the same as determining a message class.

Specifically, *Joseph* teaches:

> There are three message classes: latency sensitive, bandwidth sensitive and bi-modal. Latency sensitive messages are messages that must be smaller than a software configurable length "M," that is specified by a trusted software agent in a small message threshold register (not shown). Bi-modal class messages are messages that comprise two parts: a first user-specified part which includes the first "N" bytes of the message that are latency sensitive; and, a second remainder part of the message which is bandwidth sensitive. The transport agent 200 requires that N<=M. If a user specifies a latency sensitive message larger than M or a bi-modal message with a latency sensitive component >M, the transport agent 200 reclassifies the message as bandwidth sensitive. Additionally, the

> network interface prevents an M setting larger than the flit size L of the network.
>
> It should be understood that the message class and priority specifications are optional and if no message class or priority is specified with a message, the transport agent assigns one. If the message size is <=M, it defaults to the latency sensitive message class. Otherwise, it is assigned to the bandwidth sensitive message class. In either case, the message is assigned the lowest priority in the respective message class.

(col. 4, line 52 – col. 5, line 8). While *Jospeh* appears to disclose that message classification is dependent upon a specified length "M", *Joseph* does not teach or suggest that either the message size or the message class is "a remaining communication length" for a channel. Nor does *Joseph* disclose or suggest "ascertaining a remaining communication length" for a channel, much less "ascertaining a remaining communication length ... for each of the plurality of other channels". The addition of *Afek* does not cure the deficiencies of *Joseph*. Thus, *Joseph* in view of *Afek* does not teach or suggest "ascertaining a remaining communication length for the information entering the node for each of the plurality of other channels" as recited in claim 17. Nor does *Joseph* in view of *Afek* disclose or suggest "routing the information entering at one of the other channels to the first channel based upon an evaluation that considers ... the ascertained communication length for each of the plurality of other channels".

Additionally, while the Office Action concedes on page 4 that "Joseph failed to disclose routing packets to various channels based upon a current demand for channels", the Office Action further alleges on page 4 that:

> Afek is a routing algorithm for flow control. Afek, column 5, line 65. Afek's algorithm measures the amount of unused link capacity to limit session rates. Afek, column 6, lines 25-32. Afek counts the number of cells arriving over a period of time. Afek, column 6, lines 35-40. Afek adjusts session rates based upon available capacity. Afek, column 7, lines 20-26. Afek is designed for both ATM and TCP networks. Afek, column 7, line 55.

As such, the Office Action appears to allege that measuring unused link capacity corresponds to "determining a current demand of the first channel" as recited in claim 17. Even assuming, for the sake of argument, that the unused link capacity (Δ) corresponds to "a current demand of the

first channel", *Afek* does not teach or suggest "routing the information entering at one of the other channels to the first channel based upon an evaluation that considers ... the current demand for the first channel". Rather, *Afek* discloses "limit[ing] the rates of sessions sharing the link by the amount of the unused bandwidth on that link" by adjusting the rates of the sessions that use the link (col. 6, lines 25-34; emphasis added). While *Afek* appears to disclose adjusting rates of sessions sharing the same link based on the link's unused capacity, *Afek* does not teach or suggest "routing the information ... to the first channel" based on the unused link capacity. Thus, *Joseph* in view of *Afek* does not teach or suggest "routing the information entering at one of the other channels to the first channel based upon an evaluation that considers ... the current demand for the first channel" as recited in claim 17. Accordingly, *Joseph* in view of *Afek* does not disclose or suggest "routing the information entering at one of the other channels to the first channel based upon an evaluation that considers a combination of the obtained priority information for each of the plurality of other channels, the ascertained communication length for each of the plurality of other channels, and the current demand for the first channel."

For at least the reasons described above, *Joseph* in view of *Afek* fails to disclose, teach or suggest all of the features recited in claim 17. Therefore, Applicant respectfully requests that the rejection of claim 17 be withdrawn.

I. Dependent Claims 18-20

Since independent claim 17 is allowable, Applicant respectfully submits that claims 18-20 are allowable for at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir.1988). Therefore, Applicant respectfully requests that the rejection of claims 18-20 be withdrawn.

J. Dependent Claim 18

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully requests that the rejection of claim 18 be withdrawn for at least the reason that *Joseph* in view of *Afek* fails to disclose, teach, or suggest at least the features recited and emphasized below. Applicant's claim 18 provides as follows (emphasis added):

> The method of claim 17, further comprising ***determining a demand for channels coupled to remote nodes between a current node and a destination node and utilizing this information in determining a channel over which to route the information entering the at least one of the plurality of distributed switching nodes***.

The Office Action alleges on page 7 that "Claim 18 is the egress equivalent of the ingress method of claim 2, and the rejection of claim 2 is applicable to claim 18." With respect to claim 2, the Office Action alleges on page 4 that:

> Afek measures amount of unused link capacity. Afek, column 6, lines 25-32. The implementation of Afek over a network involves back pressure on the previous routers, and any demand on remote nodes would be propogated backward using Afek to all prior nodes.

Applicant respectfully disagrees. While *Afek* discloses determining the unused capacity of a link (Δ) by counting the number of cells arriving on the link, *Afek* does not teach or suggest "determining a demand for channels coupled to remote nodes between a current node and a destination node". Even assuming, *arguendo*, that limiting the rates of sessions sharing a link to keep a certain portion of the link capacity unused produces "back pressure" on previous routers, Applicant submits that propogating "back pressure" to previous nodes is not the same as "determining a demand for channels coupled to remote nodes between a current node and a destination node". The addition of *Joseph* does not cure the deficiencies of *Afek*. Thus, *Joseph* in view of *Afek* does not disclose or suggest "determining a demand for channels coupled to remote nodes between a current node and a destination node". Nor does Joseph in view of Afek teach or suggest "utilizing this information in determining a channel over which to route the

information entering the at least one of the plurality of distributed switching nodes" as recited in claim 18.

For at least the reasons described above, *Joseph* in view of *Afek* fails to disclose, teach or suggest all of the features recited in claim 18. Therefore, Applicant respectfully requests that the rejection of claim 18 be withdrawn.

K. Dependent Claim 19

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully requests that the rejection of claim 19 be withdrawn for at least the reason that a *prima facie* case of obviousness has not been established using the art of record. The Office Action alleges on page 7 that "Claim 19 is the egress equivalent of the ingress method of claim 10, and the rejection of claim 10 is applicable to claim 19." With respect to claim 10, the Office Action alleges on page 6 that "It would have been obvious to one of ordinary skill in the art at the time of the invention to substantially balance all three of these factors when routing information to treat each factor with equal importance as best needed for system requirements." Applicant respectfully disagrees. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). "'[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR*, 550 U.S. at 418, 82 USPQ2d at 1396 quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). Applicant submits that, other than the bald assertion that "[i]t would have been obvious", the Office Action provides no articulated reasoning, in light of the cited references, to support the legal conclusion. Thus, Applicant

respectfully submits a *prima facie* case of obviousness has not been established using the art of record and requests that the rejection of claim 19 be withdrawn.

L. Dependent Claim 20

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully requests that the rejection of claim 20 be withdrawn for at least the reason that a *prima facie* case of obviousness has not been established using the art of record. The Office Action alleges on page 7 that "Claim 20 is the egress equivalent of the ingress method of claim 11, and the rejection of claim 11 is applicable to claim 20." With respect to claim 11, the Office Action alleges on page 6 that "It would have been obvious to one of ordinary skill in the art at the time of the invention to make one of these factors weighted more than the others when routing information based on system requirements." Applicant respectfully disagrees. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). "'[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR*, 550 U.S. at 418, 82 USPQ2d at 1396 quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). Applicant submits that, other than the bald assertion that "[i]t would have been obvious", the Office Action provides no articulated reasoning, in light of the cited references, to support the legal conclusion. Thus, Applicant respectfully submits a *prima facie* case of obviousness has not been established using the art of record and requests that the rejection of claim 20 be withdrawn.

M. Independent Claim 21

Applicant's amended claim 21 provides as follows (emphasis added):

> A computer readable medium encoded with instructions executable by a processing element node for routing information entering the node over a first channel to one of a plurality of other channels in a multi-node network comprising a plurality of distributed switching nodes, the instructions comprising:
> logic configured to obtain priority information for the information;
> ***logic configured to ascertain a remaining communication length for the information for each of the plurality of other channels***;
> ***logic configured to determine a current demand for each of the plurality of other channels***; and
> ***logic configured to route the information entering at the first channel to one of the other channels based upon an evaluation that considers a combination of the obtained priority information, the ascertained communication length for each of the plurality of other channels, and the current demand for each of the plurality of other channels***.

Applicant respectfully submits that independent claim 21 is allowable for at least the reason that *Joseph* in view of *Afek* does not disclose, teach, or suggest at least the features recited and emphasized above in claim 21.

The Office Action alleges on page 7 that "Claim 21 is substantially the same as claim 1." Assuming, *arguendo*, that claim 21 is rejected on the same grounds as claim 1, the Office Action states on pages 3-4 that:

> Joseph is a system for communicating messages between nodes of a packet switched communication network. Joseph, Abstract. Joseph looks at the priority of the message. Joseph, column 4, line 51. Joseph looks at the length of the packet being transmitted. Joseph, column 4, lines 54-67 – software configurable length "M". The length "M" is used to determine the message class. Joseph, column 5, lines 1-8. The routing and forwarding of packets to a specific channel in Joseph is performed based upon the priority of a message, and the class of the message. Joseph, column 5, lines 8-15... Joseph failed to disclose routing packets to various channels based upon a current demand for channels.

As such, the Office Action appears to allege that using the length of the packet to determine a message class corresponds to "ascertain[ing] a remaining communication length for the information for each of the plurality of other channels" as recited in claim 21. Applicant

respectfully disagrees. Applicant submits that "ascertain[ing] a remaining communication length ... for each of the plurality of other channels" is not the same as determining a message class. Specifically, *Joseph* teaches:

> There are three message classes: latency sensitive, bandwidth sensitive and bi-modal. Latency sensitive messages are messages that must be smaller than a software configurable length "M," that is specified by a trusted software agent in a small message threshold register (not shown). Bi-modal class messages are messages that comprise two parts: a first user-specified part which includes the first "N" bytes of the message that are latency sensitive; and, a second remainder part of the message which is bandwidth sensitive. The transport agent 200 requires that N<=M. If a user specifies a latency sensitive message larger than M or a bi-modal message with a latency sensitive component >M, the transport agent 200 reclassifies the message as bandwidth sensitive. Additionally, the network interface prevents an M setting larger than the flit size L of the network.
>
> It should be understood that the message class and priority specifications are optional and if no message class or priority is specified with a message, the transport agent assigns one. If the message size is <=M, it defaults to the latency sensitive message class. Otherwise, it is assigned to the bandwidth sensitive message class. In either case, the message is assigned the lowest priority in the respective message class.

(col. 4, line 52 – col. 5, line 8). While *Jospeh* appears to disclose that message classification is dependent upon a specified length "M", *Joseph* does not teach or suggest that either the message size or the message class is "a remaining communication length" for a channel. Nor does *Joseph* disclose or suggest "ascertaining a remaining communication length" for a channel, much less "ascertain[ing] a remaining communication length ... for each of the plurality of other channels". The addition of *Afek* does not cure the deficiencies of *Joseph*. Thus, *Joseph* in view of *Afek* does not teach or suggest "logic configured to ascertain a remaining communication length for the information for each of the plurality of other channels" as recited in claim 21. Nor does *Joseph* in view of *Afek* disclose or suggest "logic configured to route the information entering at the first channel to one of the other channels based upon an evaluation that considers ... the ascertained communication length for each of the plurality of other channels".

Additionally, while the Office Action concedes on page 4 that "Joseph failed to disclose routing packets to various channels based upon a current demand for channels", the Office Action further alleges on page 4 that:

> Afek is a routing algorithm for flow control. Afek, column 5, line 65. Afek's algorithm measures the amount of unused link capacity to limit session rates. Afek, column 6, lines 25-32. Afek counts the number of cells arriving over a period of time. Afek, column 6, lines 35-40. Afek adjusts session rates based upon available capacity. Afek, column 7, lines 20-26. Afek is designed for both ATM and TCP networks. Afek, column 7, line 55.

As such, the Office Action appears to allege that measuring unused link capacity corresponds to "determin[ing] a current demand for each of the plurality of other channels" as recited in claim 21. Applicant respectfully disagrees. Specifically, *Afek* teaches:

> The basic idea of the algorithm is to keep a certain portion of the link capacity unused and to limit the rates of sessions sharing the link by the amount of the unused bandwidth on that link. Δ is defined to be the unused link capacity, i.e., the link capacity minus the sum of the rates of sessions that use the link. The rates of sessions that are above Δ are reduced towards Δ, and the rates of sessions that are below may be increased. This mechanism reaches a steady state only when the unused capacity Δ is equal to the maximum rate of any session that crosses the link and all the sessions that are constrained by this link are at this rate. The value of Δ is easily computed in the output port of each link by counting the number of cells arriving at the queue of that port over an interval of time, subtracting this amount from the number of cells that could be transmitted in that interval, dividing by the length of the time interval, and converting to appropriate units of measurement. An alternative approach, which is somewhat inferior, is to compute the value of Δ by counting the number of cells transmitted via the link over an interval of time, subtracting this amount from the number of cells that could be transmitted in that interval, and, as before, dividing by the length of the time interval and converting to appropriate units of measurement.

(Col. 6, lines 24-46). While *Afek* discloses determining the unused capacity of a link (Δ) by counting the number of cells arriving on the link, *Afek* does not teach or suggest "logic configured to determine a current demand <u>for each of the plurality of other channels</u>". The addition of *Joseph* does not cure this deficiency of *Afek*.

Even assuming, for the sake of argument, that the unused link capacity (Δ) is determined for other channels, *Afek* does not teach or suggest "rout[ing] the information

entering at the first channel to one of the other channels based upon an evaluation that considers ... the current demand for each of the plurality of other channels". Rather, *Afek* discloses "limit[ing] the rates of sessions sharing the link by the amount of the unused bandwidth on that link" by adjusting the rates of the sessions that use the link (col. 6, lines 25-34; emphasis added). While *Afek* appears to disclose adjusting rates of sessions sharing the same link based on the link's unused capacity, *Afek* does not teach or suggest "rout[ing] the information ... to one of the other channels" based on the unused link capacity. Thus, *Joseph* in view of *Afek* does not teach or suggest "logic configured to route the information entering at the first channel to one of the other channels based upon an evaluation that considers ... the current demand for each of the plurality of other channels" as recited in claim 21. Accordingly, *Joseph* in view of *Afek* does not disclose or suggest "logic configured to route the information entering at the first channel to one of the other channels based upon an evaluation that considers a combination of the obtained priority information, the ascertained communication length for each of the plurality of other channels, and the current demand for each of the plurality of other channels."

For at least the reasons described above, *Joseph* in view of *Afek* fails to disclose, teach or suggest all of the features recited in claim 21. Therefore, Applicant respectfully requests that the rejection of claim 21 be withdrawn.

N. Dependent Claim 22

Since independent claim 21 is allowable, Applicant respectfully submits that claim 22 is allowable for at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir.1988). Therefore, Applicant respectfully requests that the rejection of claim 22 be withdrawn.

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully requests that the rejection of claim 22 be withdrawn for at least the reason that a *prima facie*

case of obviousness has not been established using the art of record. The Office Action alleges on page 7 that "Claim 22 is substantially the same as claim 10." With respect to claim 10, the Office Action alleges on page 6 that "It would have been obvious to one of ordinary skill in the art at the time of the invention to substantially balance all three of these factors when routing information to treat each factor with equal importance as best needed for system requirements." Applicant respectfully disagrees. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). "'[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR*, 550 U.S. at 418, 82 USPQ2d at 1396 quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). Applicant submits that, other than the bald assertion that "[i]t would have been obvious", the Office Action provides no articulated reasoning, in light of the cited references, to support the legal conclusion. Thus, Applicant respectfully submits a *prima facie* case of obviousness has not been established using the art of record and requests that the rejection of claim 22 be withdrawn.

O. Dependent Claim 4

For the reasons discussed in section A above, *Joseph* in view of *Afek* fails to disclose, teach or suggest all of the features recited in claim 1. The addition of *Katsube* does not cure the deficiencies of *Joseph* and *Afek*. Because independent claim 1 is allowable over *Joseph* in view of *Afek* in further view of *Katsube*, Applicant respectfully submits that claim 4 is allowable for at least the reason that it depends from an allowable claim. *In re Fine*, 837 F.2d 1071,

5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claim 4 be withdrawn.

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully requests that the rejection of claim 4 be withdrawn for at least the reason that *Joseph* in view of *Afek* in further view of *Katsube* fails to disclose, teach, or suggest at least the features recited and emphasized below. Applicant's claim 4 provides as follows (emphasis added):

> The method of claim 1, wherein ***ascertaining the remaining communication length more specifically comprises ascertaining a quantifiable identification of a number of intermediate nodes that the information will traverse before reaching a destination node.***

While the Office Action concedes on page 8 that "Joseph in view of Afek failed to disclose ascertaining a quantifiable identification of a number of intermediate nodes that the information will traverse before reaching a destination node", the Office Action further alleges on page 8 that "Katsube taught disclosing the hop count of a packet – a quantifiable identification of a number of intermediate nodes that the information will traverse before reaching a destination node. Katsube, column 3, lines 39-49." Applicant respectfully disagrees. Applicant submits that a hop count is not the same as "a quantifiable identification of a number of intermediate nodes that the information will traverse before reaching a destination node" as recited in claim 4. Specifically, *Katsube* teaches:

> a Time-To-Live (TTL) field for checking the number of nodes through which a packet passes (hereinafter sometimes referred to as a "hop-count")... If each node (not only the ingress node and the egress node, but also an intermediate node) decrements the TTL value in the generic label header one-by-one upon transferring a packet by label switching, it is possible to discard the packet which have passed through a number of nodes greater than a predetermined number of nodes due to a reason, such as circling in the transfer path (routing loop).

Thus, while *Katsube* teaches that a hop count is the number of nodes through which a packet passes before it is discarded, *Katsube* does not disclose or suggest "a quantifiable identification of a number of intermediate nodes that the information will traverse before reaching a destination node". Accordingly, *Joseph* in view of *Afek* in further view of *Katsube* does not teach

or suggest "ascertaining the remaining communication length more specifically comprises ascertaining a quantifiable identification of a number of intermediate nodes that the information will traverse before reaching a destination node" as recited in claim 4. Therefore, Applicant respectfully requests that the rejection of claim 4 be withdrawn.

CONCLUSION

Applicant respectfully requests that all outstanding objections and rejections be withdrawn and that this application and presently pending claims 1-22 be allowed to issue. Any statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. If the Examiner has any questions or comments regarding Applicant's response, the Examiner is encouraged to telephone Applicant's undersigned counsel.

Respectfully submitted,

By: _____
Scott A. Horstemeyer, Reg. No. 34,183

THOMAS, KAYDEN, HORSTEMEYER & RISLEY, L.L.P.
600 Galleria Parkway, NW
Suite 1500
Atlanta, Georgia 30339-5948
Tel: (770) 933-9500
Fax: (770) 951-0933